

A NEW SPECIES OF *USCANA* GIRAULT (TRICHOGRAMMATIDAE:
HYMENOPTERA) FROM THE EGGS OF *CONICOBRUCHUS ALBOPUBENS* (PIC)¹

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(With ten text-figures and two plates)

Key words: *Uscana femoralis*, *Conicobruchus albopubens*, pest, *Cyamopsis psoraloides*

A new species, *Uscana femoralis*, is being reported from the eggs of *Conicobruchus albopubens* (Pic), a pest of *Cyamopsis psoraloides* DC (Hindi=*guar*). A key to the known Indian species of the genus *Uscana* is also given.

INTRODUCTION

Trichogrammatidae, including the well known *Trichogramma* associated with many pest species, is a family exclusively of egg parasitoids on a variety of insects. *Uscana*, another genus of Trichogrammatidae described by Girault (1911), includes 16 species which are mostly associated with the eggs of different species of Bruchidae (Viggiani 1979, Fursov 1987, Huis *et. al.* 1991). From India, only one species namely *Uscana mukerjii* (Mani) has so far been recorded from the eggs of store bruchids (Mani 1935: reported as *Chaetostricha mukerjii*). The taxonomy of genus *Uscana* is quite complicated and different species are recognized from the number of sensilla present on different segments of the antennal club. On this basis, Steffan (1954) divided the species under *Uscana* into three groups. *Uscana mukerjii* was subsequently allocated to a fourth group (Pajni and Singh 1973).

The species under report is exceptional in having greatly swollen hind femora in the male, a feature not observed in any of the known species.

OBSERVATIONS

The family Trichogrammatidae can be distinguished from other families of superfamily

Chalcidoidea by the presence of 3-segmented tarsi. Genus *Uscana* can be separated from the other genera of Trichogrammatidae by a combination of characters namely: Antenna with one or two annulets, and placoid and fungoid sensilla on the 4-segmented club; broad forewing with straight and thickened marginal vein and a row of setae on RS₁ from tip to stigma (Dout and Viggiani 1968).

KEY TO THE SPECIES OF GENUS *Uscana*

Male with hind femora normal *mukerjii* (Mani).
Male with hind femora swollen *femoralis*, sp. n.

Uscana femoralis sp. nov.
(Figs. 1, 6-14; Plate 1, 2)

DESCRIPTION

Female: Length 0.46-0.56 mm. Body short, flat, with ovipositor turned upward and forward in dry specimens; head light brown with face, front and vertex pale yellow; ocelli dark red; pronotum dark brown; mesoscutum pale yellow with two large brown patches; metanotum pale yellow; tibia and tarsi with apices pale white.

Head wider than thorax; mandibles quadridentate. Antenna with basal segment slightly widened in middle; pedicel 1.3 times as long as wide; annulets two, normal. Club 2.6 times as long as its greatest width at first segment, approximately equal in length to antennal

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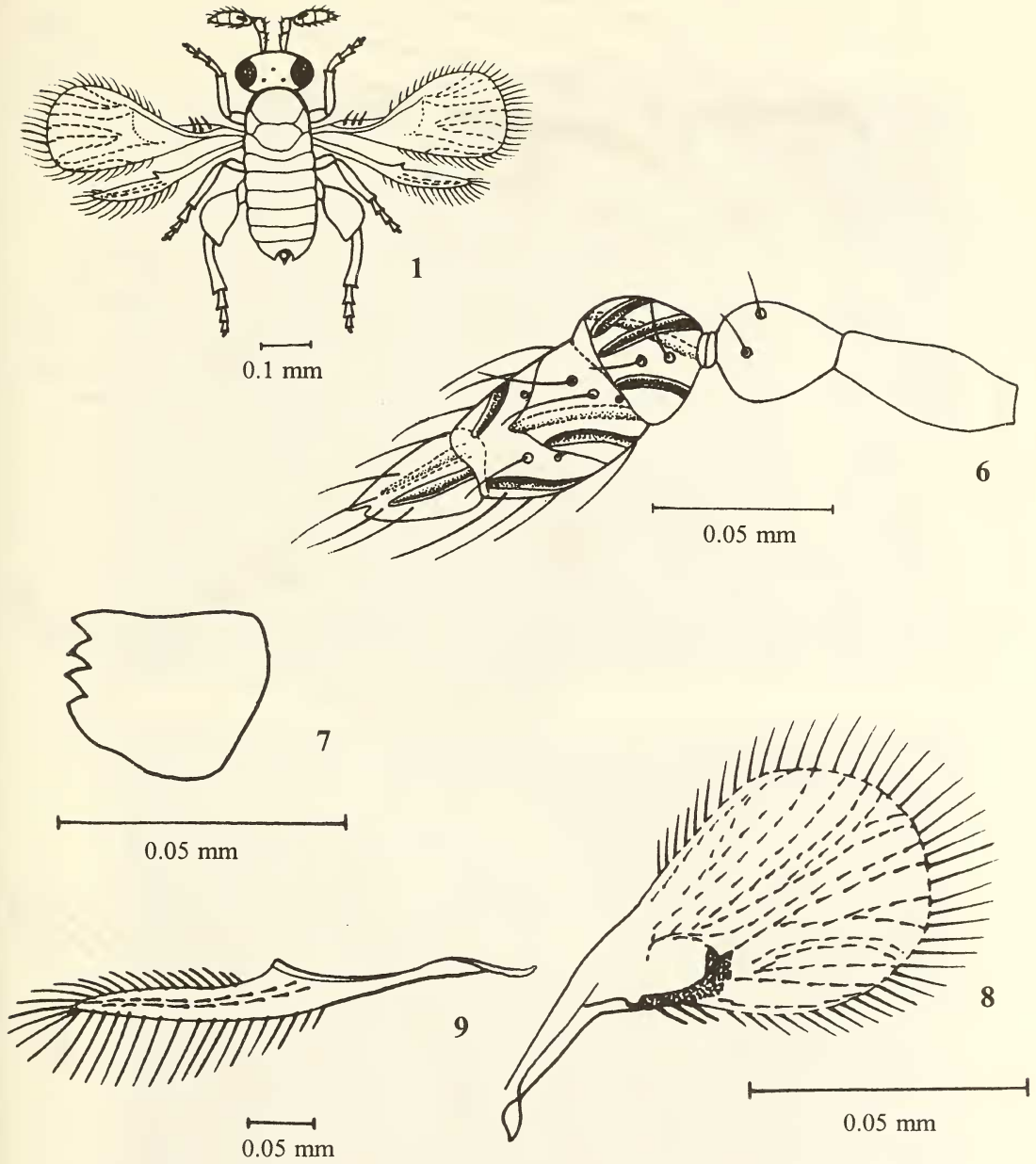
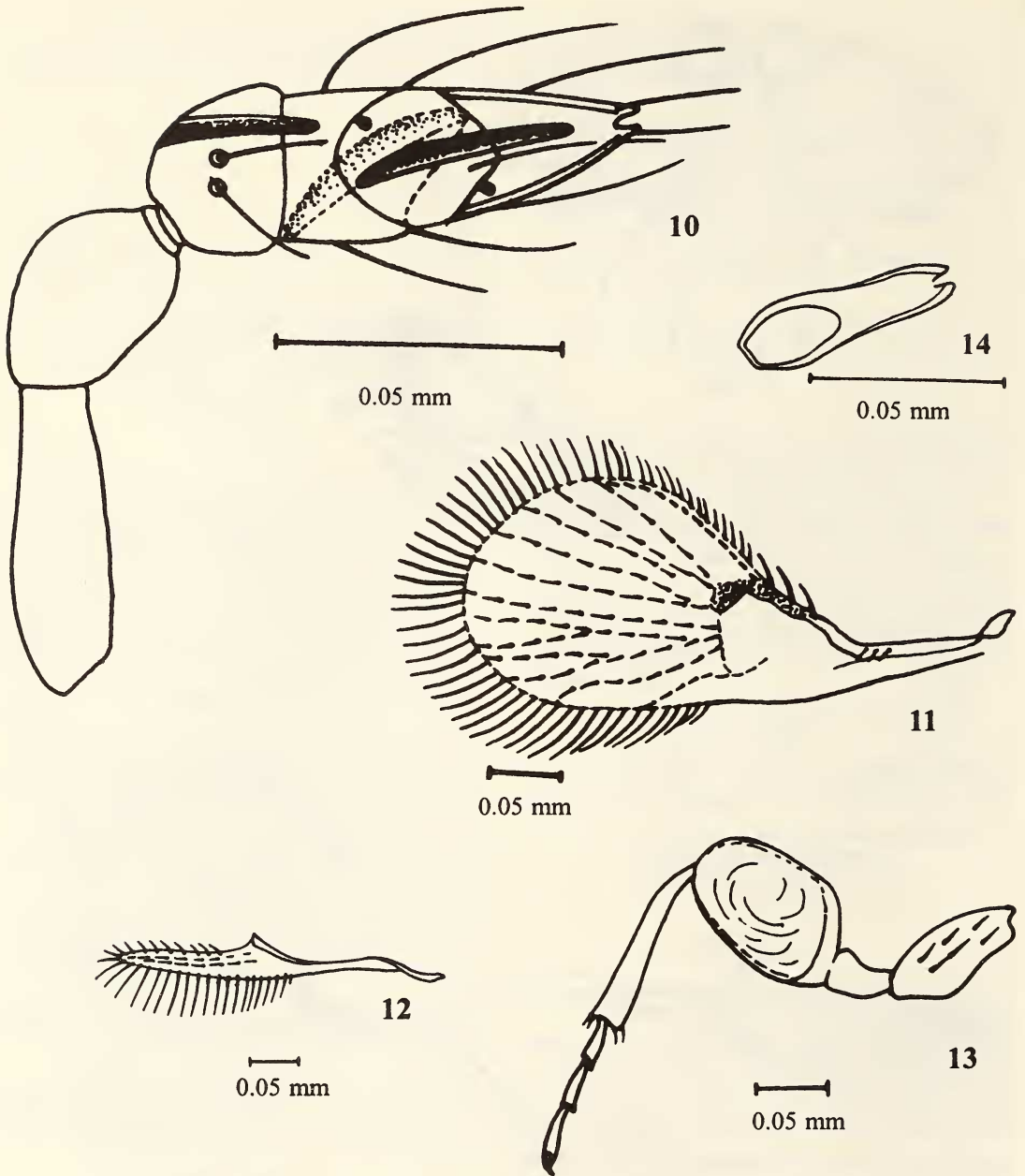


Fig. 1: *Uscana femoralis* sp. n., ♂; Figs. 6-9: *Uscana femoralis* sp. n., ♀: 6. antenna; 7. mandible; 8. forewing; 9. hindwing.

NEW DESCRIPTIONS



Figs. 10-14: *Uscana femoralis* sp. n., ♂; 10. antenna; 11. forewing; 12. hindwing; 13. hindleg; 14. genitalia.

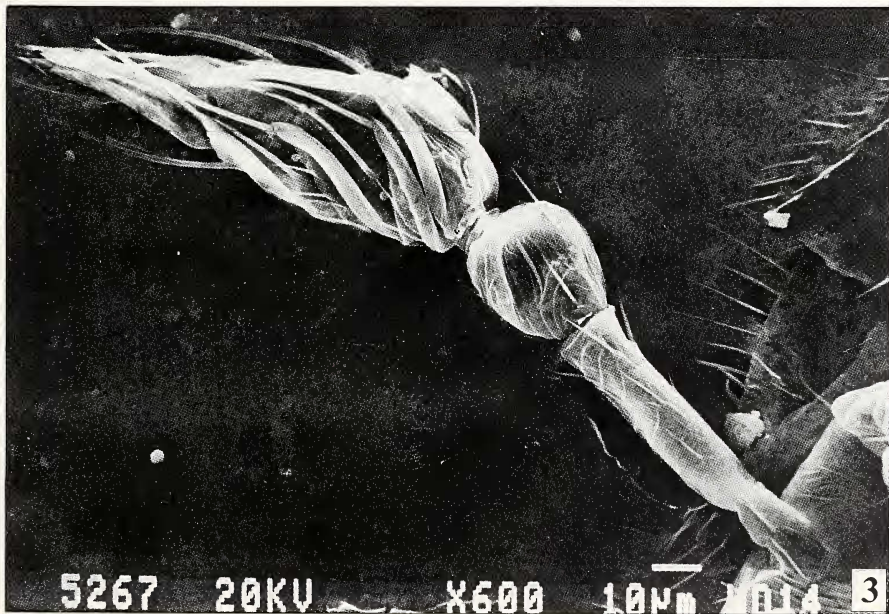
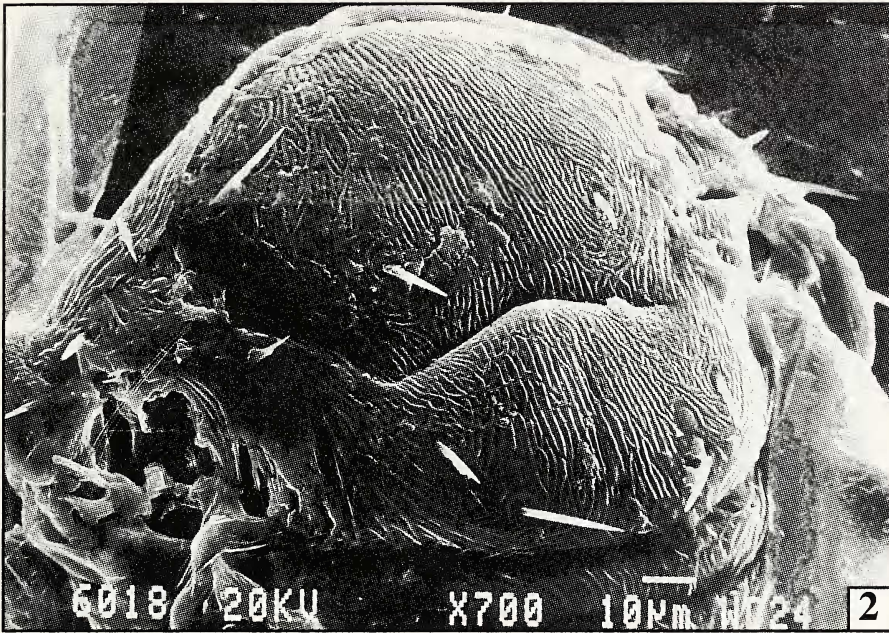


Fig. 2 & 3: *Uscana femoralis* Male: 2. Mesonotum; 3. Antenna.

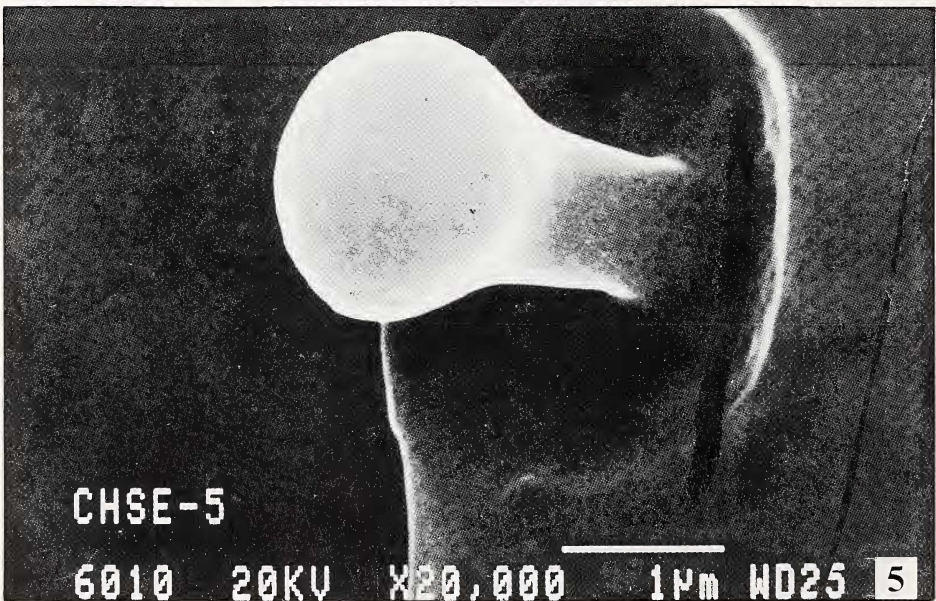
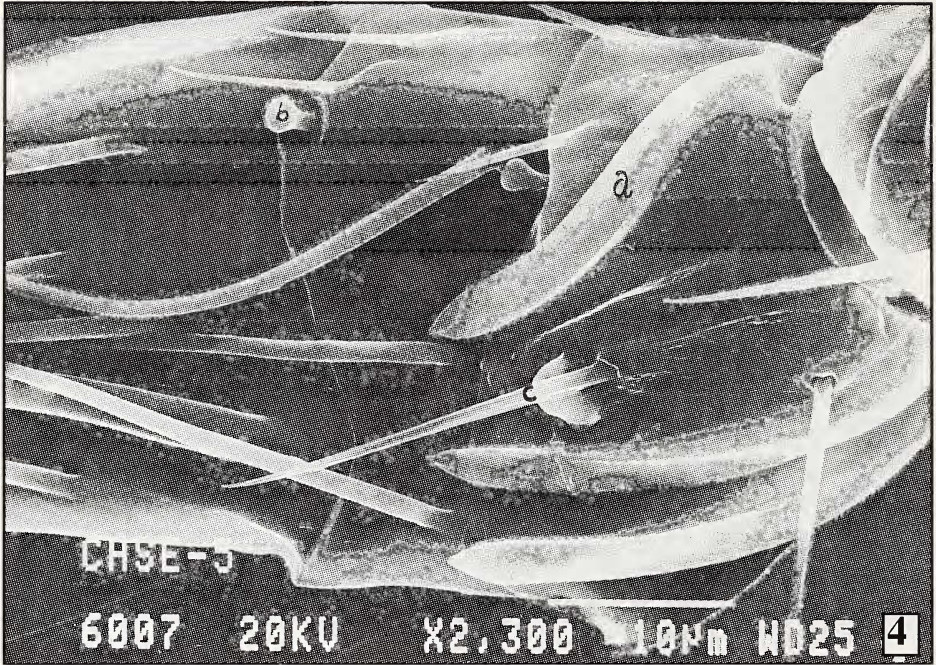


Fig. 4 & 5: *Uscana femoralis* Female: 4. Club segments with different types of sensilla; (a) placoid; (b) fungoid; (c) Chaetoid; 5. Fungoid sensillum

segments 3 and 4 together, with obtuse triangular projection on dorsal surface of first segment and a similar projection on one side of third segment, with fourth segment pointed apically, with sides of first segment 1.6 times as long as second segment and half as long as segment 3 and 4 combined. Club segments with following distribution of sensilla: placoid 4:2:2:2, fungoid 1:2:1:0, chaetoid 2:4:6:4, with longest sensilla (chaetoid) 1.4 times as long as greatest width of club.

Mesoscutum 1.6 times as wide as long, with an anterior pair of long and posterior pair of short setae; mesoscutal surface coarsely reticulate laterally and with a stripe of longitudinal reticulation in middle covering one fifth its area; scapula and axilla with single seta each; scutellum 1.9 times as wide as long, with an anterior pair of short and posterior pair of long setae, with coarse reticulation on sides and longitudinal reticulation in the middle. Postphragma reaching the abdominal tergite IV, a little shorter than length of mesonotum.

Forewing twice as long as its greatest width and its fringe one-fifth as long as its greatest width; costal cell 1.7 times as long as marginal vein; marginal vein 2.4 times as long as wide, furnished with 3 costal setae, 6 short hairs on dorsal side and 3 short hairs on ventral side; radial vein four fifths the length of marginal vein. Surface of forewing with 16 rows of discal setulae, 13 of them running uniformly. Hindwing about 8 times as long as its greatest width, its fringe 1.5 times as long as greatest width of free membrane.

Abdomen 1.69 times as long as thorax; ovipositor protruding, approximately equal to length of midtibia (16:14.5).

Male: Length 0.39 - 0.51 mm. Pedicel 1.5 times as long as wide; annulets 2; club 2.9 to 3.0 times as long as its greatest width at first segment and 1.5 times as long as segments 1 and 2 combined, first and third segments equal, second

and third subequal, segment 1 slightly reduced on inside and prolonged on outside, segment 2 with incurved sides and projecting upper surface, segment 4 bifid at tip; sensilla of club with following distribution: placoid 1:1:1:0; fungoid 1:1:1:1; chaetoid 3:3:2:5.

Forewing 2.3 times as long as its greatest width, its fringe one third of its greatest width; surface of forewing with discal setulae arranged in 17 rows, with 13 of them uniform. Hindwing about 7 times the greatest width of free membrane. Hind femur strongly broadened, dark brown; male genitalia with phallobase 3.0 times as long as broad.

Material: *Holotype* Male; from eggs of *Conicobruchus albopubens* (Pic) on the pods of *Cyamopsis psoraloides* DC (*guar*); Coll. Seema Sood, 23.ix.1995; Chandigarh. *Paratypes* 8 males, 4 females; collection data same as for the holotype. Type material in Entomology section, Department of Zoology, Panjab University, Chandigarh. Regn. No. 135/99.

Distribution: Areas surrounding Chandigarh.

Biology: A parasitoid of eggs of *Conicobruchus albopubens* (Pic), which is a pest of *Cyamopsis psoraloides* DC (Hindi = *guar*). Under laboratory conditions, it also attacks the eggs of *Callosobruchus maculatus* (Fabr.), *C. analis* (Fabr.), *C. chinensis* (Linn.) and *Zabrotes subfasciatus* (Boh.).

Etymology: The species has been named after the characteristic greatly swollen hind femora of the male.

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NEW DESCRIPTIONS

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